

adjusting the area of the patch antenna if the estimated output impedance does not approximately match the transmitter amplifier output impedance.

A3 30. (NEW) The method of claim 27 further comprising adjusting the pass band characteristic of the patch antenna to reduce the need for filtering of a received signal having predetermined frequency characteristics.

REMARKS

Claims 1 through 21 are pending in this application. Claims 1 through 12 have been rejected. Claims 13 through 21 have been cancelled without prejudice or disclaimer, after being withdrawn from consideration pursuant to a restriction requirement imposed by the Examiner on November 30, 2000. Claims 1, 2 and 8 have been amended to clarify the novel features of the present invention. New claims 22 through 30 are herewith presented for examination. The Applicants submit for the consideration of the Examiner the following arguments in support of the allowance of the claims.

Figure 8 of the application was inadvertently omitted upon filing, and is included herewith. No new matter has been added.

Rejections Under 35 USC § 112

Claims 2 and 5 stand rejected under 35 USC § 112 as being indefinite for failing to particularly point out and distinctly claim the subject matter which the Applicants regard as the invention. These rejections are respectfully traversed.

Claim 2 has been amended to provide antecedent basis for the patch antenna.

Applicants believe that claim 5 does not require amendment. A single antenna cannot have an orthogonal field of reception relative to itself. Therefore, it is clear to one of ordinary skill in the art that the orthogonal field of reception of the receive antenna must be relative to something else. Furthermore, the claim recites that "the receive antenna has an orthogonal field of reception," and it would be clear to one of ordinary skill in the art that the "receive" antenna and the "field of



reception" are related.

Rejections Under 35 USC § 102

Claims 1, 2 and 8 stand rejected under 35 U.S.C. § 102(b) as being anticipated by U.S. Patent No. 5,530,919 granted to Tsuru et al. (hereinafter "*Tsuru*"). These rejections are respectfully traversed.

Tsuru fails to provide a prima facie basis for rejection of claims 1, 2 and 8, as amended, under 35 U.S.C. § 102(b) because it fails to disclose each element in these claims. Claim 1, as amended, includes "a transmitter amplifier coupled to the antenna, the transmitter amplifier having an output impedance that matches the impedance of the antenna." Claim 8, as amended, recites "a transmitter amplifier coupled to the transmit antenna, the transmitter amplifier having an output impedance that matches the impedance of the transmit antenna." One advantage of the present invention identified in the specification at page 8, lines 3 through 18, is that an optimal match between the output impedance of the transmitter amplifier and the load impedance of the antenna can be provided. *Tsuru* fails to address the impedance characteristics of antenna 3 of *Tsuru*, and it is not clear whether the antenna 3 of *Tsuru* could be modified or adjusted in any way to match the output impedance of a transmitter amplifier. Not only does *Tsuru* fail to disclose this element of the claims, but it also fails to suggest a need to combine the teachings of *Tsuru* with those of another reference in order to determine how to adjust the impedance of the antenna 3 of *Tsuru*. Thus, *Tsuru* fails to provide a basis under 35 USC § 102 or 35 USC § 103 for rejection of these claims.

Claims 2 through 7 depend from Claim 1 and provide additional elements not found in the prior art of record. Claims 9 through 12 depend from claim 8 and provide additional elements not found in the prior art of record. For these reasons and for other reasons readily apparent, the Applicants believe that Claims 1 through 12, as amended, clearly distinguish over the prior art, and requests that they be allowed to issue.

Rejections Under 35 USC § 103

Claims 3, 4, 6 and 7 stand rejected under 35 U.S.C. § 103(a) as being unpatentable over

Tsuru further in view of U.S. Patent No. 5,678,202 granted to Filimon et al. (hereinafter "*Filimon*"). Claim 5 is rejected under 35 U.S.C. § 103(a) as being unpatentable over *Tsuru* further in view of U.S. Patent No. 6,134,420 granted to Flowerdew et al. (hereinafter "*Flowerdew*"). Claim 9 is rejected under 35 U.S.C. § 103(a) as being unpatentable over *Tsuru*. Claim 10 is rejected under 35 U.S.C. § 103(a) as being unpatentable over *Tsuru* further in view of *Flowerdew*. Claims 11 and 12 are rejected under 35 U.S.C. § 103(a) as being unpatentable over *Tsuru* further in view of *Filimon*. These rejections are respectfully traversed.

Neither *Tsuru* nor *Filimon*, alone or in combination, disclose each element of the invention of claims 3, 4, 6, and 7, in light of the amendment to claim 1. Furthermore, Applicants note that the loop antenna or patch antenna of *Filimon* is used to *increase* the coupling between the antenna and the human body, not to *decrease* the coupling. In fact, *Filimon* states that "the user's body becomes a receiving medium that receives 404 an electromagnetic signal. . . ." *Filimon*, col. 5, lines 51 through 53. Thus, *Filimon* teaches away from the present invention, the purpose of which is to minimize the exposure of the user to electromagnetic signals.

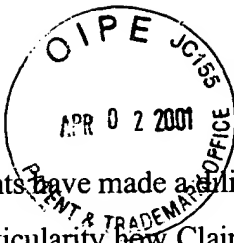
In regards to claim 7, it is stated that *Filimon* "further discloses that it is useful to match the impedance of the antenna to the transmitter." *Filimon* requires the use of a matching circuit 203 to achieve this, and in fact performs this function only for electric field antenna 201. As the patch antenna 202 of *Filimon* is only used for receiving signals and not for transmitting, *Filimon* fails to disclose or otherwise suggest that the patch antenna 202 can be modified to match the impedance to the transmitter.

In regards to claims 6 and 9 through 12, these claims are allowable over the prior art of record at least for the reason that they depend from claims that are allowable.

For these reasons, and for other reasons readily apparent, claims 3 through 7 and 9 through 12 are allowable over the prior art of record.

Conclusion

Claims 1 through 12 are pending in the present application. Claims 1, 2, and 8 have been amended. New claims 22 through 30 have been presented herewith for examination. The

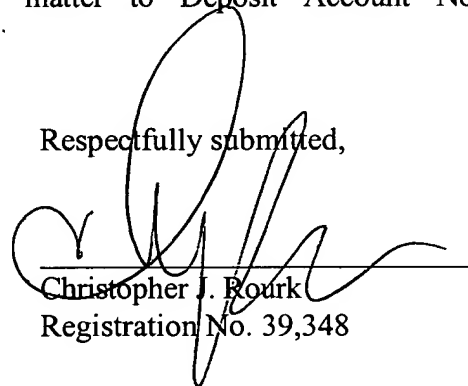


Applicants have made a diligent effort to advance the prosecution of this application by pointing out with particularity how Claims 1 through 12 distinguish over the prior art of record. The Applicants respectfully submit that the rejection of Claims 1 through 12 under 35 U.S.C. §§ 102 and 103 have been overcome and requests they be withdrawn. An early Notice of Allowance of Claims 1 through 12 and 22 through 30 is respectfully solicited. The Examiner is invited to contact the Attorney for the Applicants at the telephone number provided below if further explanation of the Applicants' position would help to advance the prosecution of the application.

A marked-up version of the changes made to the claims by the current amendment is attached hereto.

No fee is believed due with this Response. If any required fee has been overlooked, the Commissioner of Patents and Trademarks is hereby authorized to charge any fee deficiency or to credit any fee overpayment relating to this matter to Deposit Account No. 01-0657.

Respectfully submitted,



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VERSION WITH MARKINGS TO SHOW CHANGES MADE

In the Claims

1. (AMENDED) A system for wireless communications comprising:
a hand-held wireless communications device;
an antenna coupled to the hand-held wireless communications device, the antenna
configured to radiate with greater field intensity over an area of less than 360 degrees of arc;
5 **a transmitter amplifier coupled to the antenna, the transmitter amplifier having an
output impedance that matches the impedance of the antenna;** and

wherein the antenna is oriented such that the area of less than 360 degrees of arc is in the
direction away from a head of a user of the hand-held wireless communications device.

2. (AMENDED) The system of claim 1 wherein the **antenna is a** patch antenna
that is provided so as to filter the radiated signal by radiating the radiated signal within a narrow,
predetermined band.

8. (AMENDED) A system for wireless communications comprising:
a hand-held wireless communications device;
a transmit antenna coupled to the hand-held wireless communications device;
a transmitter amplifier coupled to the transmit antenna, the transmitter amplifier
5 **having an output impedance that matches the impedance of the transmit antenna;** and
a receive antenna coupled to the wireless communications device.